

10.0 Lowman, Idaho, Disposal Site

10.1 Compliance Summary

The Lowman, Idaho, Uranium Mill Tailings Radiation Control Act (UMTRCA) Title I Disposal Site was inspected on July 8, 2008. The disposal cell and all associated surface water diversion and drainage structures were in excellent condition and functioning as designed. Vegetation continues to naturally encroach on the top and side slopes of the disposal cell in accordance with the Long-Term Surveillance Plan (LTSP). Noxious weed infestations continue to be monitored and sprayed with herbicide; populations of the weeds have been reduced significantly. No other maintenance needs or cause for a follow-up or contingency inspection were identified.

10.2 Compliance Requirements

Requirements for the long-term surveillance and maintenance of the Lowman Disposal Site are specified in the *Long-Term Surveillance Plan for the U.S. Department of Energy Lowman, Idaho, (UMTRCA Title I) Disposal Site* (DOE–LM/GJ771–2005, Revision 2, U.S. Department of Energy [DOE], January 2005) and in procedures established by DOE to comply with requirements of Title 10 *Code of Federal Regulations* Part 40.27 (10 CFR 40.27). These requirements are listed in Table 10–1.

Table 10–1. License Requirements for the Lowman Disposal Site

Requirement	Long-Term Surveillance Plan	This Report
Annual Inspection and Report	Section 3.3	Section 10.3.1
Follow-Up or Contingency Inspections	Section 3.4	Section 10.3.3
Routine Maintenance and Repairs	Section 3.5	Section 10.3.4
Corrective Action	Section 3.6	Section 10.3.5

Institutional Controls—The 18-acre disposal site is owned by the United States of America and was accepted under the U.S. Nuclear Regulatory Commission (NRC) general license (10 CFR 40.27) in 1994. DOE is the licensee and, in accordance with the requirements for UMTRCA Title I sites, is responsible for the custody and long-term care of the site. Institutional controls at the disposal site, as defined by DOE Policy 454.1, consist of federal ownership of the property, warning/no-trespassing signs placed along the property boundary, and a locked gate across the access road that leads to the site. The site is not fenced. Verification of these institutional controls is part of the annual inspection.

Inspectors found no evidence that these institutional controls were ineffective or violated.

10.3 Compliance Review

10.3.1 Annual Inspection and Report

The site, located approximately one-half mile northeast of Lowman, Idaho, was inspected on July 8, 2008. Results of the inspection are described below. Features and photograph locations (PLs) mentioned in this report are shown on Figure 10–1. Numbers in the left margin of this report refer to items summarized in the “Executive Summary” table.

10.3.1.1 Specific Site-Surveillance Features

Access Road, Entrance Gate, and Signs—The site is at the end of a hard-packed gravel road about 650 feet north of Idaho State Highway 21. The road, which crosses U.S. Forrest Service land, was in excellent condition. A locked gate spans the road about 150 feet from the state highway and was in excellent condition.

One entrance sign and 18 perimeter signs delineate the unfenced site boundary. The entrance sign is just inside the site boundary near site marker SMK-1. Although the sign has several bullet holes, it was still legible and does not need to be replaced (PL-1). The 18 perimeter signs are on steel posts along the site boundary. Four signs have bullet holes or dents, but they were legible and do not need to be replaced. The other perimeter signs were in excellent condition.

Site Markers and Monuments—There are two site markers (PL-2), four boundary monuments, and three combination survey/boundary monuments. All were in excellent condition.

Monitor Wells—Groundwater monitoring is no longer required at the site according to the revised LTSP (January 2005). All seven wells were decommissioned in August 2006 in accordance with State of Idaho groundwater protection requirements. The reclaimed well locations were successfully revegetated with seeded and local plant species.

10.3.1.2 Transects

To ensure a thorough and efficient inspection, the site was divided into three transects: (1) the top and side slope of the disposal cell, (2) the area between the disposal cell and the site boundary, and (3) the outlying area.

Within each transect, the inspectors examined specific site-surveillance features, vegetation, and other features. Inspectors also looked for evidence of settlement, erosion, or other modifying processes that might affect the site's integrity or long-term performance.

Top and Side Slope of the Disposal Cell—The 8-acre disposal cell was completed in 1991. Basalt riprap armors the top and west-facing side slope of the disposal cell. An apron of larger riprap surrounds the disposal cell on all sides. The riprap was in excellent condition, and no evidence of instability, such as subsidence, slumping, or cracking, was observed on any of the cell surfaces (PL-3).

Vegetation encroachment by species, including ponderosa pine, continues on the top and side slopes of the disposal cell (PL-3 and PL-4). Encroachment is a natural process operating at this location and will be allowed to continue in accordance with the LTSP. Although DOE is no longer required to remove pine trees as they mature, the revised LTSP states that DOE will repair any damage that may occur to the riprap cover and underlying cover layers caused by blowdown or other processes to maintain protection from erosion and possible consequent dispersion of cell contents. The largest ponderosa pine trees on the cover are now approximately 9 feet tall.

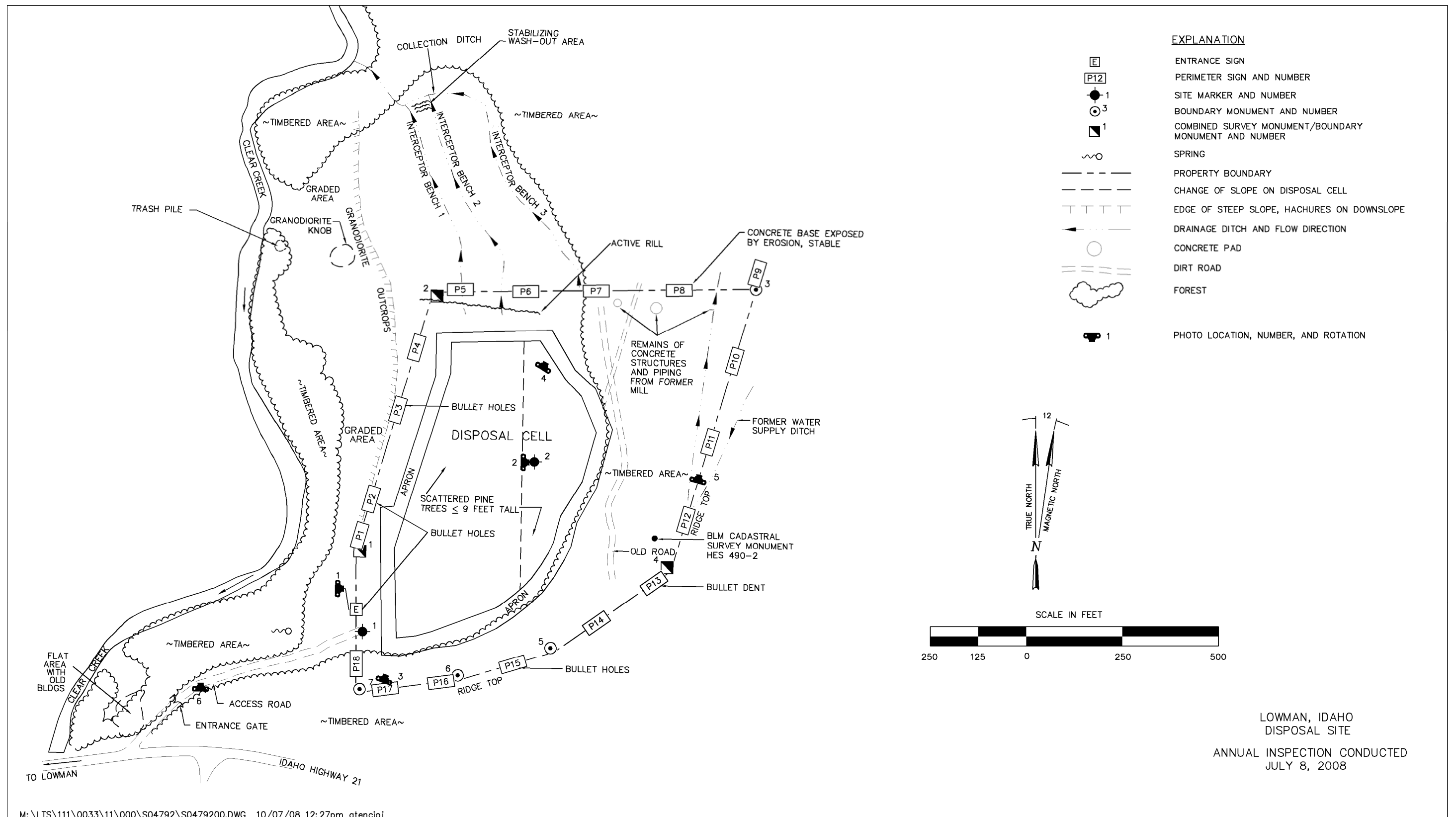


Figure 10-1. 2008 Annual Compliance Drawing for the Lowman Disposal Site

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Area Between the Disposal Cell and the Site Boundary—The steep slopes east (PL–5) and south of the site are stable and vegetated with well-established grasses and ponderosa pine trees. One active erosion rill was previously discovered along the north boundary of the site adjacent to perimeter signs P5 and P6; it had eroded through the berms of the lower two interceptor benches. The breach in Interceptor Bench 1 was repaired in October 2004, and the breach in Interceptor Bench 2 was repaired in June 2005. Both repairs were in excellent condition.

Concrete structures and piping from the former mill remain in an area northeast of the disposal cell. The structures remain unchanged, and no evidence of intrusion was noted.

Outlying Area—An area within 0.25 mile around the site was visually inspected for evidence of construction, development, logging, or change in land use that might affect the site. No changes were noted to the area across Clear Creek to the west, where several summer cabins are located. The area east and south of the site is U.S. Forest Service land and remains unchanged.

In 2008, inspectors noted that the geoweb installed in the collection ditch bottom was heaving upward, probably as a result of freeze-thaw processes. Several stakes holding it in place had also popped out of the ground. At this time, the heaved geoweb material does not interfere with the ditch's function.

DOE's erosion control activities on the State of Idaho parcel north of the property are complete. Erosion will continue to be monitored during annual site inspections to ensure protection of the disposal cell and other site-surveillance features such as property signs and boundary monuments. If significant erosion is observed on the State parcel and it appears that sediment could enter Clear Creek, DOE will notify the State. No erosion issues were identified during the inspection.

10.3.2 Noxious Weeds

Infestations of state-listed noxious weeds continue to persist on and adjacent to the site. Dalmatian toadflax, spotted knapweed, and Canada thistle have been treated with herbicide twice a year since summer 2003, and their populations have decreased significantly. In 2008, DOE purchased several cartons of *Mecinus janthinus*, a stem-boring weevil that specifically targets Dalmatian toadflax, and released them at two locations on the ridge east of the disposal cell. Inspectors observed many of these insects on toadflax plants (PL–6). Because of the presence of these insects, Dalmatian toadflax will no longer be treated with herbicide.

In 2004, inspectors discovered a small number of rush skeletonweed plants scattered across the site. Rush skeletonweed is pervasive throughout the Pacific Northwest and is difficult to control. The Boise County weed control supervisor informed DOE that they had released three biocontrol insects in the Lowman area to target and control the spread of this weed. However, the number of these plants has increased approximately tenfold on the DOE site since 2004. In June 2008, rush skeletonweed plants were treated with an herbicide. They will continue to be treated until a newer biocontrol insect, *Bradyrrhoa gilveolella*, a root-feeding moth, is made available for public release. At that time, DOE will likely purchase and release this insect on the disposal site and discontinue treating rush skeletonweed with herbicide.

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The State of Idaho added several noxious weed species to its control list in 2008. Two of these species, oxeye daisy and hoary alyssum, occur on the Lowman Site. They will be controlled with herbicide during subsequent herbicide treatments.

10.3.3 Follow-Up or Contingency Inspections

DOE will conduct follow-up inspections if (1) a condition is identified during the annual inspection or other site visit that requires a return to the site to evaluate the condition, or (2) DOE is notified by a citizen or outside agency that conditions at the site are substantially changed.

No follow-up or contingency inspections were required in 2008.

10.3.4 Routine Maintenance and Repairs

In 2008, noxious weeds were treated with biocontrol and herbicide applications.

10.3.5 Corrective Action

Corrective action is taken to correct out-of-compliance or hazardous conditions that create a potential health and safety problem or that may affect the integrity of the disposal cell or compliance with 40 CFR 192.

No corrective action was required in 2008.

10.3.6 Photographs

Table 10–2. Photographs Taken at the Lowman, Idaho, Disposal Site

Photograph Location Number	Azimuth	Description
PL–1	90	Bullet-damaged entrance sign.
PL–2	90	Site marker SMK–2 on the disposal cell cover.
PL–3	20	West slope of the disposal cell.
PL–4	30	Lewis' mock orange growing on the disposal cell cover.
PL–5	15	View north of the ridge along the east side of the site.
PL–6	0	<i>Mecinus janthinus</i> weevil on a Dalmatian toadflax plant.



LOW 7/2008. PL-1. Bullet-damaged entrance sign.



LOW 7/2008. PL-2. Site marker SMK-2 on the disposal cell cover.



LOW 7/2008. PL-3. West slope of the disposal cell.



LOW 7/2008. PL-4. Lewis' mock orange growing on the disposal cell cover.



LOW 7/2008. PL-5. View north of the ridge along the east side of the site.



LOW 7/2008. PL-6. Mecinus janthinus weevil on a Dalmatian toadflax plant.

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